Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method of multi-mode communications, the method comprising:

receiving signals from multiple sources at a plurality of sample buffers;

referencing the plurality of sample buffers for a first source at one time and referencing the plurality of sample buffers for a second source at another time; and

communicating data from the referenced plurality of sample buffers to a processing unit, wherein the processing unit concurrently receives inputs from buffers in the plurality of sample buffers and outputs to other buffers in the plurality of sample buffers.

2. (Original) The method of claim 1, wherein samples from the first source are demodulated and samples from the second source are not demodulated.

3. (Original) The method of claim 1, wherein samples from the first source are demodulated and samples from the second source are partially processed.

4. (Original) The method of claim 1, wherein the multiple sources comprise communication sources operating using different communication protocols.

5. (Original) The method of claim 1, wherein the different communication protocols comprise any one of CDMA technologies, OFDM technologies, 802.11a, 802.11b, and 802.11g.

6. (Original) The method of claim 1, wherein the multiple sources comprise multiple communication receivers.

7. (Canceled).

8. (Currently Amended) **A method of multi-mode digital communications, the** **[[The]]** method ~~**of claim 7, further**~~ comprising**:**

asynchronously processing received communication samples at a processing unit, wherein the communication samples processed by the processing unit

correspond to more than one communication protocol specification;

controlling the processing unit by programmed instructions; and

updating the programmed instructions based on processing factors.

9. (Original) The method of claim 8, wherein the processing factors comprise any one of processing results, user preferences, and system information.

10. (Original) The method of claim 8, wherein updating the programmed instructions comprise instructions to implement a new communication protocol specification.

11. (Currently Amended) **A method of multi-mode digital communications, the** **[[The]]** method ~~**of claim 7, further**~~ comprising**:**

asynchronously processing received communication samples at a processing unit, wherein the communication samples processed by the processing unit correspond to more than one communication protocol specification;

controlling the processing unit by programmed instructions; and

selectively directing the communication samples from separate buffers to one processing unit of a plurality of processing units.

12. (Original) A system for multi-mode communications, the system comprising:

means for receiving signals from multiple sources at a plurality of sample buffers;

means for referencing the plurality of sample buffers for a first source at one time and referencing the plurality of sample buffers for a second source at another time; and

means for communicating data from the referenced plurality of sample buffers to a processing unit, wherein the processing unit concurrently receives inputs from buffers in the plurality of sample buffers and outputs to other buffers in the plurality of sample buffers.

13. (Original) The system of claim 12, wherein samples from the first source are demodulated and samples from the second source are not demodulated.

14. (Original) The system of claim 12, wherein samples from the first source are demodulated and samples from the second source are partially processed.

15. (Original) The system of claim 12, wherein the multiple sources comprise communication sources operating using different communication protocols.

16. (Original) The system of claim 12, wherein the different communication protocols comprise any one of CDMA, 802.11a, 802.11b, and 802.11g.

17. (Original) The system of claim 12, further comprising means for selectively directing data from separate buffers to one processing unit of a plurality of processing units.

18. (Original) The system of claim 12, further comprising means for selectively directing data from separate buffers to one processing unit of a plurality of processing units, wherein the one processing unit is configured to perform vector processing operations.

19. (Original) The system of claim 18, further comprising means for accumulating results of successive outputs.

20. (Original) The system of claim 18, wherein the vector processing operations comprise a single instruction that drives calculation of a vector.